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BULK SAMPLES

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A. INTRODUCTION

DEFINITIONS

Bulk samples, often called “material samples” or “hazardous substance samples”, are samples of substances and chemicals received, used and/or stored in the workplace. These samples are usually large enough for easy handling and of sufficient quantity to be divided for several analytical procedures.

Laboratory: Analytical Laboratory

CALICO Laboratory: Division’s calibration and inventory control laboratory

PURPOSE

Bulk samples are submitted to the Laboratory to verify the presence of hazardous substances or to determine various physical characteristics of a hazardous substance.

a. The results of the analysis of bulk samples may be used to determine the applicability of certain regulations which require specific actions by the employer if a certain hazardous substance is present or is present in a concentration exceeding a specified quantity, e.g., §5214, Inorganic Arsenic.

b. Knowledge of the hazardous substance present in the workplace is used to aid in determining the proper sampling protocol for air contaminants. The results of laboratory analysis of bulk samples are often critical in the decision to conduct airborne contaminate sampling.

EVALUATION OF ENGINEERING CONTROLS

Evaluation of engineering controls requires knowledge of the hazardous substances present in the workplace.

PERSONAL PROTECTION

Personal protective equipment (PPE) appropriate for the hazard shall be worn when conducting an employee exposure evaluation and obtaining all samples. When collecting bulk samples of chemicals and other substances; they must be treated as "hazardous", "extremely toxic" and at their "maximum concentration", unless there is documentation to the contrary. (See DOSH Injury and Illness Prevention Program)

B. GENERAL

1. Suitable containers must be used to collect bulk samples.

    a. Flammable solvents are to be collected in metal containers.

    b. The containers must be capable of being tightly sealed to prevent loss of the sample and contamination of other samples and equipment.

2. Do not collect liquid samples of hazardous substances whose boiling point is less than 40°C (104°F). These substances should be collected as gas or vapor samples.

3. Container label information from which bulk sample was collected must be recorded.

4. The Laboratory must be consulted before samples of corrosive, explosive, carcinogenic, or other extremely hazardous substance is submitted.

5. Check with the Laboratory for amounts needed, when in doubt.

C. PROCEDURE

ORGANIC AND FLAMMABLE SOLVENTS

a. Use one-pint metal cans with screw-type lids to collect organic and flammable solvents. These cans are available from the Calico Laboratory.

b. Do not fill cans completely full, but leave room for thermal expansion.

c. Clean drips and spills from exterior of container.

d. Do not ship or store bulk samples with sorbent samples

e. Apply Cal/OSHA 80 Sample Seal to insure integrity of the sample.

AQUEOUS AND REACTIVE SOLUTIONS

a. Aqueous solutions and solvents which react with metal should be collected in glass or plastic bottles.

b. Collect a minimum of 100 ml (4 fluid ounces). Sample bottles are available from the Laboratory.

c. Clean drips and spills from exterior of container.

d. Screw top on securely. Do not use paper liners for solvents. Wrap with tape to prevent leakage.

e. Apply Cal/OSHA 80 Sample Seal to insure integrity of the sample.

DRY MATERIAL AND BULK SAMPLES

a. Plastic-lined paper specimen bags are suitable for most dry bulk samples. Letter envelopes are not suitable.

b. Submit several grams to the Laboratory. It is generally not necessary to fill the bag completely.

c. Close the bag securely to prevent the escape of hazardous substances and the contamination of yourself, other samples, and the Laboratory. Double bag if necessary to avoid breakage and contamination.

d. Apply Cal/OSHA 80 Sample Seal to insure integrity of the sample.

e. Settled dust samples obtained from rafters or horizontal ledges are useful in the analysis of particulate contaminants when sufficient amounts can be collected.

GAS SAMPLES

a. Gas and vapor samples can be collected in gas bags, gas bottles, balloons (in an emergency) or rigid gas tight containers.

b. Although generally 1 to 10 liters are submitted, the Laboratory should be consulted for minimum amounts, which depend on the analysis requested.

c. Do not overfill the gas bags. Allow for expansion when collected at other than ambient temperature and pressure. Be extra careful when filling from compressed gas cylinder or high pressure line.

d. Apply Cal/OSHA 80 Sample Seal to insure integrity of sample